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MOUNTING, FINISHING AND PRESERVING SLIDES.

FRANK L. JAMES, Ph.D., M. D., St. Louis, Mo.

The first article to which I wish to call your attention is this little device for holding cover-glasses after they are cleaned and ready for application to the slip. It consists, as you see, of a coil of brass spiral spring wire bent around a cork which has been grooved to receive it. The method of using suggests itself, and is illustrated by the cover-glasses now in position on it.

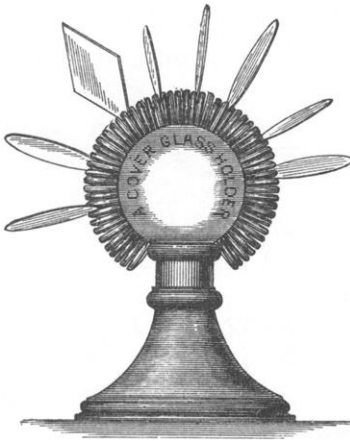
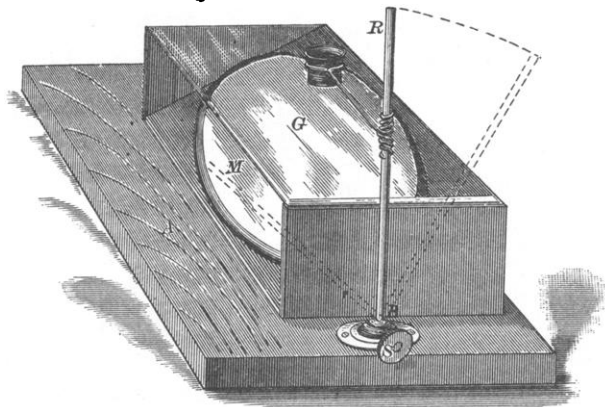


Fig. 2



The next object in the way of a convenience is what I call a mounting box. It consists, as you see, of a cigar box from which the top and front side have been removed, an old hand-mirror and a plate-glass cover. In use, this stands on a board which car-



ries an upright rod provided with a ball and socket joint. On this rod slides an arm made of wire 'twisted so as to hold a watchmaker's

eye-glass. When not in use the ball and socket joint permits this rod to be turned down out of the way. When I go to work with this box I seat myself in front of a window or other source of light, and place the object to be dissected or slide to be arranged on the plate-glass cover. The light is thrown upward by the mirror and through the cover-plate so as to render visible the minutest detail of the object to be arranged. In fact, the entire combination is a sort of mounting and dissecting microscope on a large scale.

Another device to which I wish to call your attention is this one upon the slide cabinet. On the under side of each tray I have fastened pieces of vulcanized India rubber, a half inch in diameter and an eighth of an inch in thickness. These pieces of rubber are so arranged that one of them comes on each end of the slide beneath it, in such manner that the slide is prevented from rising up against the bottom of the superincumbent tray. The slips in the upper tray are held in place by similar bits of rubber fastened to the cover of the box. These bits of rubber are put on with marine glue and cannot be removed by any ordinary pull or blow. To prepare marine glue for this purpose I dissolve the commercial marine glue (as sold by the dealers in microscopic accessories) in equal parts of benzol and absolute alcohol. Neither of these agents alone will make a complete solution of it, but the mixture does so very perfectly, and makes a cement of the greatest tenacity.

The last object to which I will call attention is this device for centering and holding the slide upon the turn-table. It consists of the ordinary triangular jaws pivoted exactly opposite to each other, and the acute end of one of the slips resting against a good strong spring. The slip is shoved into place from the open end of the jaws, opposite to the end held by the spring. A slide placed between these jaws is held as firmly as in a vise, and the cell can be turned down or manipulated exactly as though it were in a lathe. The instrument that I use for turning down cells, cleaning around cover-glasses, etc., is an ordinary cataract knife such as oculists use. By honing off the point so that it has a bearing of about one-eighth of an inch a very perfect tool is obtained—one that can be used for lifting a section or a cover-glass as well as turning down a cell.

In response to an inquiry Dr. James stated that the slides exhibited in the case sent around for examination were not finished with any varnish, but that the finish was obtained by the use of a finishing cement or enamel prepared as follows: Linseed oil is boiled with litharge for a couple of hours and allowed to cool off and settle. The clear oil is then poured off and submitted to a current of oxygen until it becomes thick and viscid, almost like India rubber. This substance is redissolved in benzol and the color ground up in it. But two colors were used to produce all the effects there shown, *viz.*, red and blue. For the red, carmine, and for the blue, ultramarine, was used. These cements were applied directly upon the oxide of zinc cement used for building and closing the cell. The fine lines, resembling delicate striping, were not produced by a striping pencil but were the result of whirling the turn-table rapidly after applying the cements. The difference in the specific gravity of the fluids caused them to arrange themselves in this manner. The best effects were produced when the cements were laid freely, one on top of the other, while the white zinc base was still fresh and plastic. In this manner all of the cements set and dried simultaneously and homogeneously, giving a finish as brilliant and almost as hard as polished flint or glass.